CLAIMS

1. A dynamoelectric stator comprising:

a cylindrical stator core in which slots are arranged in a circumferential direction so as to open onto an inner circumferential side; and

a stator winding mounted to said stator core,

characterized in that said stator winding comprises a plurality of slot-housed portions housed in each of said slots; and coil end portions linking together end portions of said slot-housed portions that are housed in pairs of said slots separated by a predetermined number of slots,

wherein said slot-housed portions are formed with a racetrack-shaped cross section, and are housed so as to line up in at least one column in a radial direction with a longitudinal direction of said cross section aligned in a circumferential direction so as to be in close contact with each other.

2. The dynamoelectric stator according to Claim 1, characterized in that said slot-housed portions are formed so as to satisfy an aspect ratio L_2/L_1 that is greater than or equal to forty-five percent and less than or equal to seventy percent ($45\% \leq L_2/L_1 \leq 70\%$), where L_1 is a length of a long side of said racetrack-shaped cross section and L_2 is a length of a short side.

3. The dynamoelectric stator according to Claim 1, characterized in that said slot-housed portions are housed inside said slots so as to line up in single columns in a radial direction.

4. The dynamoelectric stator according to Claim 3, characterized in

that said slot-housed portions are formed so as to satisfy an aspect ratio L_2/L_1 that is greater than or equal to forty-five percent and less than or equal to seventy percent ($45\% \leq L_2/L_1 \leq 70\%$), where L_1 is a length of a long side of said racetrack-shaped cross section and L_2 is a length of a short side.

5. The dynamoelectric stator according to Claim 1, characterized in that said slots are formed into a substantially trapezoidal shape tapering radially inward; and aspect ratios of said cross sections of said slot-housed portions housed so as to line up inside said slots in a radial direction are formed so as to increase gradually radially inward so as to match said substantially trapezoidal shape of said slots.

6. The dynamoelectric stator according to Claim 5, characterized in that said slot-housed portions are formed so as to satisfy an aspect ratio L_2/L_1 that is greater than or equal to forty-five percent and less than or equal to seventy percent ($45\% \leq L_2/L_1 \leq 70\%$), where L_1 is a length of a long side of said racetrack-shaped cross section and L_2 is a length of a short side.

7. The dynamoelectric stator according to Claim 1, characterized in that said slots are impregnated with a varnish.

8. A method for manufacturing a dynamoelectric stator, said method comprising a cross section flattening process in which slot-housed portions having a circular cross section are individually held between flat pressing plates and shaped into a racetrack-shaped cross section by applying pressure to said slot-housed portions with said pressing plates without restraining said slot-housed portions in a direction of expansion.

9. The method for manufacturing a dynamoelectric stator according to Claim 8, characterized by shaping said slot-housed portions into said racetrack-shaped cross section so as to satisfy an aspect ratio L_2/L_1 that is greater than or equal to forty-five percent and less than or equal to seventy percent ($45\% \leq L_2/L_1 \leq 70\%$), where L_1 is a length of a long side of said racetrack-shaped cross section and L_2 is a length of a short side.

10. The method for manufacturing a dynamoelectric stator according to Claim 8, characterized by further comprising a process for preparing a winding unit by winding a conductor wire having a circular cross section into a ring shape for a predetermined number of winds before said cross section flattening process; and a process for shaping said winding unit to prepare a star-shaped winding unit in which star-shaped patterns in which end portions of adjacent straight slot-housed portions are alternately linked on an inner circumferential side and an outer circumferential side by angular C-shaped coil end portions are superposed in multiple layers,

wherein said slot-housed portions superposed in said multiple layers of said star-shaped winding unit are shaped into said racetrack-shaped cross section one layer at a time in said cross section flattening process.

11. The method for manufacturing a dynamoelectric stator according to Claim 10, characterized by shaping said slot-housed portions into said racetrack-shaped cross section so as to satisfy an aspect ratio L_2/L_1 that is greater than or equal to forty-five percent and less than or equal to seventy percent ($45\% \leq L_2/L_1 \leq 70\%$), where L_1 is a length of a long side of said racetrack-shaped cross section and L_2 is a length of a short side.

12. The method for manufacturing a dynamoelectric stator according to Claim 8, characterized by further comprising a process for preparing a winding unit by winding a conductor wire having a circular cross section into a ring shape for a predetermined number of winds before said cross section flattening process; and a process for shaping said winding unit to prepare a star-shaped winding unit in which star-shaped patterns in which end portions of adjacent straight slot-housed portions are alternately linked on an inner circumferential side and an outer circumferential side by angular C-shaped coil end portions are superposed in multiple layers,

wherein said slot-housed portions superposed in said multiple layers of said star-shaped winding unit are simultaneously shaped into said racetrack-shaped cross section in said cross section flattening process by interposing said pressing plates between each of said layers of said slot-housed portions and disposing said pressing plates at first and second ends in a direction of stacking of said slot-housed portions.

13. The method for manufacturing a dynamoelectric stator according to Claim 12, characterized by shaping said slot-housed portions into said racetrack-shaped cross section so as to satisfy an aspect ratio L_2/L_1 that is greater than or equal to forty-five percent and less than or equal to seventy percent ($45\% \leq L_2/L_1 \leq 70\%$), where L_1 is a length of a long side of said racetrack-shaped cross section and L_2 is a length of a short side.